



Louisville Metro Air Pollution Control District  
701 West Ormsby Avenue, Suite 303  
Louisville, Kentucky 40203-3137



27 February 2019

## Federally Enforceable District Origin Operating Permit Statement of Basis

<b>Source:</b>	<b>NHK Spring Precision of America, Inc.</b>	<b>Owner:</b>	<b>NHK Spring Precision of America, Inc.</b>
	10600 Freeport Drive		10600 Freeport Drive
	Louisville, KY 40258		Louisville, KY 40258

Application Documents:	See Table 8 in section I		
Public Comment Date:	See Permit Revision Table		
Permitting Engineer:	Randy Schoenbaechler	Permit Number:	O-1568-15-F(R1)
Plant ID:	1568	SIC:	3493
		NAICS:	332613

### Introduction:

This permit will be issued pursuant to District Regulation 2.17- *Federally Enforceable District Origin Operating Permits*. Its purpose is to limit the plant wide potential emission rates from this source to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.

This permit revision is to include equipment from construction permit C-1568-1009-17-F and C-1568-1010-18-F. Also, the removal of Greenhouse Gas Limits in the general conditions. This action also updates permit format and equipment lists.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), particulate matter less than 10 microns (PM<sub>10</sub>); and unclassifiable for particulate matter less than 2.5 microns (PM<sub>2.5</sub>). The county is a non-attainment area for ozone (O<sub>3</sub>). This facility is located in the portion of the county that is an attainment area for sulfur dioxide (SO<sub>2</sub>).

### Permit Application Type:

<input type="checkbox"/> Initial issuance	<input type="checkbox"/> Permit Revision	<input type="checkbox"/> Permit renewal
	<input type="checkbox"/> Administrative	
	<input type="checkbox"/> Minor	
	<input checked="" type="checkbox"/> Significant	

### Compliance Summary

<input type="checkbox"/> Compliance certification signed	<input type="checkbox"/> Compliance schedule included
<input type="checkbox"/> Source is out of compliance	<input checked="" type="checkbox"/> Source is operating in compliance

## Source Information

1. **Product Description:** NHK Spring Precision manufactures steel valve springs and steel transmission springs from purchased steel wire that arrives at the plant in large bundles/spools.
2. **Process Description:** Spring Manufacturing
3. **Site Determination:** There are no other facilities that are contiguous or adjacent to this facility
4. **Emission Unit Summary:**

Emission Unit	Equipment Description
U1	Edge Grinder (A-4), Daisho Seiki Co, model GMV4-915 Edge Grinder (A-8), Asahi Seiki, model AGI2N Edge Grinder (A-9), Asahi Seiki, model AGI2N Edge Grinder (B-4), Daisho Seiki Co, model GMV4-915 Chamfering Machine Custom (B-5A) Chamfering Machine Custom (B-5B) Edge Grinder (D-4), Daisho Seiki Co, model GMV4-915 Edge Grinder (D-5), Daisho Seiki Co, model GMV4-915 Continuous Shot Peening Machine (D-6), Itoh Kikoh, model IMD 27 Shot Blaster (Dry Horning) (SB-1), Sinto Kogio, model SJA11D Cooling Tower (OS-1), Marley, model 496 Edge Grinder (C14), Asahi-Seiki, model AG12N Edge Grinder (C-15), Asahi-Seiki, model AG12N Edge Grinder (C-16), Asahi-Seiki, model AG12N Chamfering machine (A-5A), make Asahi Seiki, model AA Chamfering machine (A-5B), make Asahi Seiki, model AA Gardner grinder (E-4), make Gardner, model 4V36T Chamfering machine (E-5A), make Asahi Seiki, model AA Chamfering machine (E-5B), make Asahi Seiki, model AA Edge grinder (F-4), make Daisho Seiki, model GMV4-915 Edge grinder (G-4), make Dorn, model DR660-2VE Chamfering machine (G-5), make NHK INA Edge grinder (H-4), make Dorn, model DR660-2VE Chamfering machine (H-5A), make Seiki, model WO110, capacity 1,800 piece/hr Edge grinder (I-4), make Dorn, model DR660-2VE, capacity 6,000 piece/hr Chamfering machine (I-5A), make NHK, capacity 972 piece/hr Chamfering machine (I-5B), make NHK, capacity 6,600 piece/hr Shot Blaster (Dry Horning) (SB-2), Sinto Kogio, SJA11D
U2	Shot Peening Machine (A-10), Sinto Kogio, model SNB-50W with Internal Baghouse Shot Peening Machine (A-12), Sinto Kogio, model SNB-30 with Internal Baghouse Shot Peening Machine (B-6), Sinto-Kogio, model SNB-50W with Internal Baghouse Shot Peening Machine (B-8), Sinto Kogio, model SNB-30 with Internal Baghouse Shot Peening Machine (SB-3), Sinto-Kogio, model SNB-30 with Internal Baghouse Pre-shot Peening Machine (GCN-Preshot-1), Sinto Kogio, model SNB-30Y with Internal Baghouse

<b>Emission Unit</b>	<b>Equipment Description</b>
	Pre-shot Peening Machine (GCN-Preshot-2), Sinto Kogio, model SNB-30Y with Internal Baghouse Shot-Peening Machine (E-6), Sinto-Kogio, model SNB-30W with Internal Baghouse Shot-Peening Machine (E-8), Sinto-Kogio, model SNB-50W with Internal Baghouse Shot-Peening Machine (F-6), Sinto-Kogio, model SNB-30W with Internal Baghouse Shot-Peening Machine (F-8), Sinto-Kogio, model SNB-50W with Internal Baghouse
U3	Inspection Machine (A-17), Inspection Machine, make Morita Co., capacity 7,200 piece/hr Inspection Machine (B-13), Inspection Machine, make Morita Co., capacity 7,200 piece/hr Inspection Machine (E-13), Inspection Machine, make VICS., capacity 7,200 piece/hr Inspection Machine (AS-2), Inspection Machine, make Morita Co., capacity 7,200 piece/hr Inspection Machine (F-13), Inspection Machine, make VICS., capacity 7,200 piece/hr Inspection Machine (G-13), Inspection Machine, make VICS., capacity 7,200 piece/hr Inspection Machine (H-13), Inspection Machine, make VICS., capacity 7,200 piece/hr Inspection Machine (D-8), Inspection Machine, make Morita Co., capacity 7,200 piece/hr Inspection machine (H-14), Mishima Space Pad, model Space Shot Cam, capacity 300 piece/hr Inspection machine (C-13), VICS, custom, capacity 7200 piece/hr Inspection machine (H-15), NHK custom, capacity 300 piece/hr Inspection machine (H-16), NHK custom, capacity 650 piece/hr Inspection machine (H-17), NHK custom, capacity 1,300 piece/hr Inspection machine (H-18), NHK custom, capacity 300 piece/hr Inspection machine (H-19), NHK custom, capacity 300 piece/hr Inspection machine (H-20), NHK custom, capacity 1,300 piece/hr
U4	Parts Washer with no secondary reservoir
IA-1	GCN-1 - GCN-6 (Direct – fired Furnaces), Two (2) Ammonia Storage Tanks, and Six (6) hot setting machines,

**5. Fugitive Sources:** There are no fugitive source emissions at this facility.

**6. Permit Revisions:**

<b>Permit No.</b>	<b>Public Notice Date</b>	<b>Issue Date</b>	<b>Change Type</b>	<b>Description/Scope</b>
O-1568-15-F	2/19/2015; 12/16/2015	1/19/2016	Initial	Initial FEDOOP issuance
O-1568-15-F(R1)	1/05/2019	2/27/2019	Sig.	Incorporating equipment from construction permits C-1568-1009-17-F, C-1568-1010-18-F,

Permit No.	Public Notice Date	Issue Date	Change Type	Description/Scope
				and removing GHGs from General Condition 10. Moved Parts Washer to Unit 4 from IA-1.
			Admin	Renaming several emission point IDs

## 7. Construction Permit History:

Permit No.	Issue Date	Description
C-1568-1010-18-F	12/05/2018	Added (6) Inspection Machines, (1) Grinder, (2) Chamfering Machines, (1) Shot Peening Machine, (2) GCN furnaces with Ammonia Tank and Nitrogen Tank, reassigning of Emission Point ID GCN-5 and GCN-6, and use of VOC quenching fluid at Hot Setting Machines.
C-1568-1009-17-F	2/27/2017	Added two inspection machines (H-14, I-13) to Unit 3, a shot blaster (SB-2), a chamfering machine (H-5A), and a dust collector (OS-13) as the control device for the new shot blaster to Unit 1.
C-1568-1008-15-F	10/30/2015	Edge Grinders (B-4, D-4 and D-5), make Daisho Seiki Co, model GMV4-915, capacity 7200 valve springs/hr for B-4, and capacity 1500 transmission springs/hr each for D-4 and D-5; Two (2) Small Edge Grinders (A-8 and A-9), make Asahi Seiki, model AGI2N, capacity 3600 valve springs/hr each; and Chamfering Machines (B-5A and B-5B), make custom, model custom, capacity 3600 valve spring/hr each Shot Peening Machines (SB-3 and B-8), make Sinto-Kogio, model SNB-30, capacity 12,000 valve springs/hr (959 lb shot/hr) each; Shot Peening Machine (B-6), make Sinto-Kogio, model SNB-50, capacity 12,000 valve springs/hr (959 lb shot/hr); one (1) Continuous Shot Peening Maching (D-6), make Itoh Kikoh, model IMD 27, capacity 6000 transmission springs/hr (959 lb shot/hr); one (1) Pre-shot Peening Machine (GCN-5), make Sinto Kogio, model SNB-30Y, capacity 12,000 valve springs/hr (959 lb shot/hr)
C-1568-1007-15-F	10/30/2015	Grinders; chamfering machines; shot peening machines; and inspection machines that will be used by four new production lines E, F, G, and H and the existing production line A.
35474-12-C(R1)	09/10/2013	Installation of one (1) new Asahi-Seiki model AGI2N small edge grinder, E29 (C-14), controlled by an existing baghouse (OS-6)
35941-12-C(R1)	09/10/2013	Installation of two (2) new Asahi-Seiki model AGI2N small edge grinder, E30 and E31 (C15 and C-16), and one (1) new custom made chamfering machine, E32 (C-17), controlled by an existing baghouse (OS-6)

Permit No.	Issue Date	Description
37302-13-C	09/10/2013	Installation of two (2) new Asahi-Seiki model AGI2N small edge grinders, E33 (C-18) and E34 (C-19, controlled by an existing baghouse (OS-6)
333-06-C	11/30/2007	Edge Grinders (B-4, D-4 and D-5), make Daisho Seiki Co, model GMV4-915, capacity 7200 valve springs/hr for B-4, and capacity 1500 transmission springs/hr each for D-4 and D-5; Two (2) Small Edge Grinders (A-8 and A-9), make Asahi Seiki, model AGI2N, capacity 3600 valve springs/hr each; and Chamfering Machines (B-5A and B-5B), make custom, model custom, capacity 3600 valve spring/hr each
334-06-C	11/30/2007	Two (2) New Baghouses (OS-5 and OS-7), make Donaldson, model DFT-4-48 with an additional filter on each exit vent
335-06-C	11/30/2007	Shot Peening Machines (SB-3 and B-8), make Sinto-Kogio, model SNB-30, capacity 12,000 valve springs/hr (959 lb shot/hr) each; Shot Peening Machine (B-6), make Sinto-Kogio, model SNB-50, capacity 12,000 valve springs/hr (959 lb shot/hr); one (1) Continuous Shot Peening Maching (D-6), make Itoh Kikoh, model IMD 27, capacity 6000 transmission springs/hr (959 lb shot/hr); one (1) Pre-shot Peening Machine (GCN-5), make Sinto Kogio, model SNB-30Y, capacity 12,000 valve springs/hr (959 lb shot/hr)
336-06-C	11/30/2007	Baghouse (B-7, B-9 and GCN-6) each equipped with a HEPA filter

## 8. Permit Renewal-Related Documents

Document Number	Date Received	Description
80654	11/30/2016	Construction Permit Application
80749	12/6/2016	Construction Permit Application Revision
80754	12/7/2016	Response to Construction Permit Application
80839	12/14/2016	Draft construction permit sent to company for review
80912	12/20/2016	Comments from NHK (AECOM)
80927	12/20/2016	Approved Construction PTE
80904	12/21/2016	AECOM comments with District response
80940	12/21/2016	District response to comments from NHK (AECOM)
81024	12/27/2016	Response from NHK (AECOM) on District response
81485	1/26/2017	Follow up email from District regarding 1.05 and 7.59 record keeping
82147	2/24/2017	Message from NHK (AECOM) accepting final changes
90918	2/28/2018	Application AP100A B 200A H
92444	6/6/2018;	Application 100A

Document Number	Date Received	Description
	6/7/2018	
92546	6/11/2018; 6/12/2018	Construction Application
92725	6/27/2018; 6/29/2018	Email with additional information
93656	08/06/2018; 09/14/2018	Draft permit sent to company for review. Company comments
92750	6/28/2018; 9/21/2018	Company comments and correspondence regarding FEDOOP
93069	7/13/2018	Construction and Plantwide PTE
94383	9/26/2018	Control device application form request
95464	10/29/2018	Control device form request correspondence
95700	11/02/2018	Control device forms
96977	2/4/2019	Company comments on public noticed FEDOOP
97338	2/27/2019	District response to comments

### 9. Emission Summary:

Pollutant	Company Actual Emissions (tn/yr) 2017 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	0.121	No
NO <sub>x</sub>	0.144	No
SO <sub>2</sub>	0.0009	No
PM <sub>10</sub>	1.92	Yes
VOC	8.08	No
GHG – CO <sub>2e</sub>	0	No
Single HAPs	0	No
Total HAP	2.78	No

### 10. Applicable Requirements

- |                                    |   |                                    |
|------------------------------------|---|------------------------------------|
| <input type="checkbox"/> 40 CFR 60 | <input checked="" type="checkbox"/> SIP             | <input type="checkbox"/> 40 CFR 63 |
| <input type="checkbox"/> 40 CFR 61 | <input checked="" type="checkbox"/> District Origin | <input type="checkbox"/> Other     |

11. **Referenced MACT Federal Regulations:** The source has no MACT requirements.
12. **Referenced non-MACT Federal Regulations:** There are no federal regulations for this source.

## II. Regulatory Analysis

1. **Acid Rain Requirements:** NHK Spring Precision is not subject to the Acid Rain Program.
2. **Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. NHK Spring Precision does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.
3. **Prevention of Accidental Releases 112(r):** NHK Spring Precision does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, Chemical Accident Prevention Provisions, in a quantity in excess of the corresponding specified threshold amount.
4. **Basis of Regulation Applicability**

- a. **Plantwide**

NHK Spring Precision is a potential major source for the pollutant PM<sub>10</sub>. Regulation 2.17 – *Federally Enforceable District Origin Operating Permits* establishes requirements to limit the plant wide potential emission rates to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements. Per Regulation 2.17, section 5.1, plant-wide PM<sub>10</sub> emissions are limited to 100 tons during any consecutive 12-month period.

Regulation 2.17, section 5.2, requires monitoring and record keeping to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the district upon request.

Regulation 2.17, section 7.2, requires stationary sources for which a FEDOOP is issued shall submit an Annual Compliance Certification by April 15, of the following calendar year. In addition, as required by Regulation 2.17, section 5.2, the source shall submit an Annual

Compliance Report to show compliance with the permit, by March 1 of the following calendar year. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.17, section 3.5.

**b. STAR Program**

Regulations 5.00, 5.01, 5.20, 5.21, 5.22 and 5.23 (STAR Program) establish requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards.

- i. The source submitted the original and updated plant-wide STAR Environmental Acceptability Demonstration (EA Demo) on September 26, 2008, August 20, 2012, May 01, 2013, September 19, 2015, October 09, 2015, and October 29 2015. The source also included a STAR EA Demo for each construction application. SCREEN3 air dispersion modeling air dispersion modeling was performed for each emission unit that has non-de minimis TAC emissions. As shown in the following tables, all the cumulative and individual carcinogen risk and non-carcinogen risk values are in compliance with Goals:

Plant-wide Sum	Risk	EAG
Industrial Total R <sub>C</sub>	15.71	< 38
Non-Ind. Total R <sub>C</sub>	2.83	< 3.8
Industrial Total R <sub>NC</sub> (max)	2.43	< 3.0
Non-Ind. Total R <sub>NC</sub> (max)	0.61	< 1.0

		Risk value determination									
EP	Description	Ethylbenzene R <sub>C</sub> Indus	Ethylbenzene R <sub>C</sub> Res	Ethylbenzene R <sub>NC</sub> Indus	Ethylbenzene R <sub>NC</sub> Res	Ni R <sub>C</sub> Indus	Ni R <sub>C</sub> Res	Ni R <sub>NC</sub> Indus	Ni R <sub>NC</sub> Res	Mn R <sub>NC</sub> Indus	Mn R <sub>NC</sub> Res
H-14	Inspection Machine										
I-13	Inspection Machine	0.84	0.07	0.00	0.00						
E-13	Inspection Machine	0.84	0.07	0.00	0.00						
F-13	Inspection Machine	0.84	0.07	0.00	0.00						
G-13	Inspection Machine	0.84	0.07	0.00	0.00						
H-13	Inspection Machine	0.84	0.07	0.00	0.00						
A-17	Inspection Machine	0.84	0.07	0.00	0.00						
B-13	Inspection Machine	0.84	0.07	0.00	0.00						
AS-2	Inspection Machine	0.84	0.07	0.00	0.00						



EP	Description	Risk value determination									
		Ethylbenzene R <sub>C</sub> Indus	Ethylbenzene R <sub>C</sub> Res	Ethylbenzene R <sub>NC</sub> Indus	Ethylbenzene R <sub>NC</sub> Res	Ni R <sub>C</sub> Indus	Ni R <sub>C</sub> Res	Ni R <sub>NC</sub> Indus	Ni R <sub>NC</sub> Res	Mn R <sub>NC</sub> Indus	Mn R <sub>NC</sub> Res
D-8	Inspection Machine										
H-5A	Chamfering										
A-5A	Chamfering					0.15	0.04	0.04	0.01		
A-5B	Chamfering					0.15	0.04	0.04	0.01		
E-4	Grinder					0.41	0.11	0.11	0.03		
E-5A	Chamfering										
E-5B	Chamfering										
F-4	Grinder					0.59	0.15	0.16	0.04	0.11	0.03
G-4	Grinder					0.49	0.12	0.13	0.03		
G-5	Chamfering										
H-4	Edge Grinder					0.49	0.12	0.13	0.03		
A-4	Edge Grinder					0.53	0.13	0.14	0.04	0.10	0.03
A-8	Edge Grinder					0.70	0.18	0.19	0.05	0.13	0.03
A-9	Edge Grinder					0.70	0.18	0.19	0.05	0.13	0.03
B-4	Edge Grinder					0.53	0.13	0.14	0.04	0.10	0.03
D-4	Edge Grinder					0.62	0.16	0.17	0.04	0.12	0.03
D-5	Edge Grinder					0.62	0.16	0.17	0.04	0.12	0.03
C-14	Edge Grinder					0.70	0.18	0.19	0.05	0.13	0.03
C-15	Edge Grinder					0.70	0.18	0.19	0.05	0.13	0.03
C-16	Edge Grinder					0.70	0.18	0.19	0.05	0.13	0.03
B-5A	Chamfering					0.15	0.04	0.04	0.01		
B-5B	Chamfering					0.15	0.04	0.04	0.01		
SB-2	Shot Blasting					0.11	0.02	0.03	0.00		
E-6	Shot peening										
E-8	Shot peening										
F-6	Shot peening										
F-8	Shot peening										
D-6	Continuous Shot Peening					0.12	0.03	0.03	0.01		
SB-1	Shot Blasting (Dry Honing)					0.33	0.05	0.09	0.01		
A-10	Shot Peening										
A-12	Shot Peening										
B-6	Shot Peening										

EP	Description	Risk value determination									
		Ethylbenzene R <sub>C</sub> Indus	Ethylbenzene R <sub>C</sub> Res	Ethylbenzene R <sub>NC</sub> Indus	Ethylbenzene R <sub>NC</sub> Res	Ni R <sub>C</sub> Indus	Ni R <sub>C</sub> Res	Ni R <sub>NC</sub> Indus	Ni R <sub>NC</sub> Res	Mn R <sub>NC</sub> Indus	Mn R <sub>NC</sub> Res
B-8	Shot Peening										
SB-3	Shot Peening										
GCN-P reshot- 1	Pre-shot Peening										

- ii. The TAC emission limits determined by de minimis values shall be updated each time when the District revises the BAC/de minimis values for these TACs. The current de minimis values per TAC list revised on 10/14/2013 are as the following:

TAC Name	CAS #	lb/hr	lb/averaging period	Averaging period	lb/12 consecutive month period
Ammonia	7664-41-7	54.00	48,000	Annual	Ammonia
Chromium III	16065-83-1	0.10	0.10	8 hr	NA
Copper	7440-50-8	0.04	0.04	8hr	NA
Formaldehyde	50-00-0	0.042	36.96	Annual	Formaldehyde
Naphthalene	91-20-3	0.016	13.92	Annual	Naphthalene
Nickel	7440-02-0	0.0021	NA	NA	1.82
Manganese compounds	7439-96-5	0.03	24.0	Annual	NA
Toluene	108-88-3	2,700	2,400,000	Annual	NA
Xylene	1330-20-78	54.00	48,000	Annual	NA
Ethyl Benzene	100-41-4	0.22	NA	NA	192

c. **Emission Unit U1 – Grinders, Chamfering, Shot Peening and Shot Blaster**

i. **Equipment:**

Emission Point	Description Make/Model	Install Date	Applicable Regulation	Basis for Applicability
A-4	Edge Grinder, Daisho Seiki Co, model GMV4-915	2006	STAR; 7.08	Regulations 5.00, 5.01, 5.20, 5.21 5.22, and 5.23 are applicable to any process or process equipment at a stationary source that emits a TAC.
A-8	Edge Grinder, Asahi Seiki, model AGI2N	2006		
A-9	Edge Grinder, Asahi Seiki, model AGI2N	2008		Regulation 7.08 establishes the requirements for PM emission from new

Emission Point	Description Make/Model	Install Date	Applicable Regulation	Basis for Applicability
B-4	Edge Grinder, Daisho Seiki Co, model GMV4-915	2007		processes that commences construction after September 1, 1976
B-5A	Chamfering Machine Custom	2007		
B-5B	Chamfering Machine Custom	2007		
D-4	Edge Grinder, Daisho Seiki Co, model GMV4-915	2006		
D-5	Edge Grinder, Daisho Seiki Co, model GMV4-915	2007		
D-6	Continuous Shot Peening Machine, Itoh Kikoh, model IMD 27	2006		
SB-1	Shot Blaster (Dry Horning), Sinto Kogio, SJA11D	2006		
OS-1	Cooling Tower, Marley, model 496 (This equipment is an insignificant activity)	2008		
C-14	Edge Grinder, Asahi-Seiki, model AG12N	2012		
C-15	Edge Grinder, Asahi-Seiki, model AG12N	2012		
C-16	Edge Grinder, Asahi-Seiki, model AG12N	2012		
A-5A	Chamfering machine, make Asahi Seiki, model AA	2012		
A-5B	Chamfering machine, make Asahi Seiki, model AA	2012		
E-4	Gardner grinder, make Gardner, model 4V36T	2013		
E-5A	Chamfering machine, make Asahi Seiki, model AA	2014		
E-5B	Chamfering machine, make Asahi Seiki, model AA	2014		
F-4	Edge grinder, make Daisho Seiki, model GMV4-915	2014		
G-4	Edge grinder, make Dorn, model DR660-2VE	2015		
G-5	Chamfering machine, make NHK INA	2015		

Emission Point	Description Make/Model	Install Date	Applicable Regulation	Basis for Applicability
H-4	Edge grinder, make Dorn, model DR660-2VE	2015		
H-5A	Chamfering machine, make Seiki, model WO110, capacity 1,800 piece/hr, installed Aug 2016	2016		
I-4	Edge grinder, make Dorn, model DR660-2VE, capacity 6,000 piece/hr	2018		
I-5A	Chamfering machine, make NHK, capacity 972 piece/hr	2018		
I-5B	Chamfering machine, make NHK, capacity 6,600 piece/hr	2018		
SB-2	Shot Blaster (Dry Horning), Sinto Kogio, SJA11D, installed July 2016	2016		

ii. **Standards/Operating Limits**

1) **PM/PM<sub>10</sub>**

- (a) For equipment subject to Regulation 7.08 for PM, the PM emission standards are calculated per section 3.1.2. The equation to calculate the hourly PM emission limit is  $E = 3.59 * P^{0.62}$ , where E is the allowable lb/hr PM emission limit and P is the process weight rate expressed in tons/hr.
- (b) Construction Permit 342-05-C limits A-4 to 2.34 lb/hr.
- (c) Construction Permit 344-05-C limits SB-1 to 2.34 lb/hr.
- (d) Construction Permit C-1568-1008-15-F limits B-4, D-4 and D-5, A-8, A-9, B-5A, and B-5B each to 2.34 lb/hr per Regulation 7.08.
- (e) Construction Permit 335-06-C limits D-6 to 3.12 lb/hr per Regulation 7.08.
- (f) Construction Permit 35474-12-C(R1) limits C-14 to 2.34 lb/hr per Regulation 7.08.

- (g) Construction Permit 35941-12-C(R1) limits C-15 and C-16 each to 2.34 lb/hr per Regulation 7.08.
- (h) Construction Permit C-1568-1007-15-F limits A-5A, A-5B, E-4, E-5A, E-5B, F-4, G-4, G-5 and H-4 each to 2.34 lb/hr per Regulation 7.08.
- (i) For Emission Points A-4, B-4, D-4, D-5, A-8, A-9, B-5A, B-5B, SB-1, C-14, C-15, C-16, A-5A, A-5B, E-4, E-5A, E-5B, F-4, G-4, G-5, H-4, and SB-2: The owner or operator shall operate and maintain the control device at all times an associated emission point is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice for minimizing emissions per Regulation 1.05.

2) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

3) **TAC**

- (a) See Plantwide section above.

d. **Emission Unit U2 – Shot Peening Equipment**

<b>Emission Point</b>	<b>Description Make/Model</b>	<b>Install Date</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
A-10	Shot Peening Machine, Sinto Kogio, model SNB-50W with Internal Baghouse	2006	STAR; 7.08	<p>Regulations 5.00, 5.01, 5.20, 5.21, 5.22, and 5.23 are applicable to any process or process equipment at a stationary source that emits a TAC.</p> <p>Regulation 7.08 establishes the requirements for PM emission from new processes that commences construction after September 1, 1976</p>
A-12	Shot Peening Machine, Sinto Kogio, model SNB-30 with Internal Baghouse	2006		
B-6	Shot Peening Machine, Sinto-Kogio, model SNB-50W with Internal Baghouse	2007		
B-8	Shot Peening Machine, Sinto-Kogio, model SNB-30 with Internal Baghouse	2007		

Emission Point	Description Make/Model	Install Date	Applicable Regulation	Basis for Applicability
SB-3	Shot Peening, Sinto Kogio SNB-30	2006		
GCN-Preshot-1	Pre-shot Peening Machine, Sinto Kogio, model SNB-30Y with Internal Baghouse	2006		
GCN-Preshot-2	Pre-shot Peening Machine, Sinto Kogio, model SNB-30Y with Internal Baghouse	2018		
E-6	Shot peening machine, make Sinto Kogio, model SNB 30W, capacity 3,000 piece/batch	2013		
E-8	Shot peening machine, make Sinto Kogio, model SNB 50W, capacity 3,000 piece/batch	2013		
F-6	Shot peening machine, make Sinto Kogio, model SNB 30W, capacity 3,000 piece/batch	2015		
F-8	Shot peening machine, make Sinto Kogio, model SNB 50W, capacity 3,000 piece/batch	2015		

i. **Standards/Operating Limits**

1) **PM/PM<sub>10</sub>**

- (a) For equipment subject to Regulation 7.08 for PM, the PM emission standards are calculated per section 3.1.2. The equation to calculate the hourly PM emission limit is  $E = 3.59 * P^{0.62}$ , where E is the allowable lb/hr PM emission limit and P is the process weight rate expressed in tons/hr.
- (b) Construction Permit 346-05-C limits A-10 and A-12 each to 2.34 lb/hr.
- (c) Construction Permit 335-06-C limits GCN-Preshot-1 to 4.80 lb/hr per Regulation 7.08.

- (d) Construction Permit C-1568-1007-15-F limits E-6, E-8, F-6, and F-8 each to 2.34 lb/hr per Regulation 7.08.
- (e) Construction Permit C-1568-1008-15-F limits B-6, B-8, and SB-3 each to 2.34 lb/hr per Regulation 7.08.
- (f) For Emission Points B-6, B-8, SB-3, A-10, A-12, E-6, E-8, F-6 and F-8: The owner or operator shall operate and maintain the control device at all times an associated emission point is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice for minimizing emissions per Regulation 1.05.

2) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

3) **TAC**

- (a) See Plantwide section above.

e. **Emission Unit U3 – Inspection Machines**

i. **Equipment:**

<b>Emission Point</b>	<b>Description Make/Model</b>	<b>Install Date</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
A-17	Inspection Machine, make Morita Co., capacity 7,200 piece/hr	10/1/2006	STAR; 7.08 and 7.59	Regulations 5.00, 5.01, 5.20, 5.21, 5.22, and 5.23 are applicable to any process or process equipment at a stationary source that emits a TAC.  Regulation 7.08 establishes the requirements for PM emission from new processes that commences construction after September 1, 1976  Regulation 7.59 establishes the
B-13	Inspection Machine, make Morita Co., capacity 7,200 piece/hr	2/1/2007		
E-13 <sup>1</sup>	Inspection machine, make VICS, capacity 7,200 piece/hr	7/1/2013		
AS-2	Inspection Machine, make Morita Co., capacity 7,200 piece/hr	10/1/2008		

<sup>1</sup> The existing inspection machine for C-line (C-13) was moved to E-line and re-designated as E-13

<b>Emission Point</b>	<b>Description Make/Model</b>	<b>Install Date</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
F-13	Inspection machine, make VICS, capacity 7,200 piece/hr	2014		requirements for VOC emissions from new processes that commence construction after May 20, 1981.
G-13	Inspection machine, make VICS, capacity 7,200 piece/hr	2015		
H-13	Inspection machine, make VICS, capacity 7,200 piece/hr	2016		
D-8	Inspection machine, make Morita Co., capacity 3,000 piece/hr	11/6/2006		
H-14	Inspection machine, Mishima Space Pad, model Space Shot Cam, capacity 300 piece/hr	8/2016		
C-13	Inspection machine, VICS, custom, capacity 7200 piece/hr	1/2017		
H-15	Inspection machine, NHK custom, capacity 300 piece/hr	2017	STAR, 7.59	
H-16	Inspection machine, NHK custom, capacity 650 piece/hr	2017		
H-17	Inspection machine, NHK custom, capacity 1,300 piece/hr	2017		
H-18	Inspection machine, NHK custom, capacity 300 piece/hr	2017		
H-19	Inspection machine, NHK custom, capacity 300 piece/hr	12/2018		
H-20	Inspection machine, NHK custom, capacity 1,300 piece/hr	12/2018		

ii. **Standards/Operating Limits**

1) **VOC**

- (a) Regulation 7.59, section 3.1 specifies VOC content limits for all coatings used in the inspection



machines when compliant coatings are used.

- (b) Construction Permit 347-05-C limits VOC emissions to less than 5 tons per year when non-compliant coatings are used in the inspection machines.

2) **PM/PM<sub>10</sub>**

- (a) For equipment subject to Regulation 7.08 for PM, the PM emission standards are calculated per section 3.1.2. The equation to calculate the hourly PM emission limit is  $E = 3.59 * P^{0.62}$ , where E is the allowable lb/hr PM emission limit and P is the process weight rate expressed in tons/hr.

3) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

4) **TAC**

- (a) See Plantwide section above.

iii. **Monitoring and Record keeping**

1) **VOC**

- (a) Per Regulation 7.59, the owner or operator shall observe specific monitoring and record keeping requirements.

f. **Emission Unit 4 – Cold Solvent Wash with no secondary reservoir**

i. **Equipment**

<b>Emission Process</b>	<b>Description</b>	<b>Install Date</b>	<b>Applicable Regulations</b>	<b>Basis for Applicability</b>
PW-1	Cold Solvent Parts Washer no secondary reservoir	Pre-2008	STAR; 6.18	Regulations 5.00, 5.01, 5.20, 5.21, 5.22, and 5.23 are applicable to any process or process equipment at a stationary source that emits a TAC. Applies to each cold cleaners, open top vapor degreasers, and conveyorized degreasers

				that use volatile organic compounds (VOCs) to remove soluble impurities from metal surfaces.
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ii. **Standards/Operating Limits**

1) **TAC**

(a) See Plantwide section above.

2) **VOC**

(a) Per Regulation 6.18, the owner or operator shall observe specific operating requirements, and shall not operate a cold cleaner using a solvent with a vapor pressure that exceeds 1.0 mm Hg (0.019 psi) measured at 20°C (68°F).

iii. **Monitoring and Record keeping**

1) **VOC**

(a) Per Regulation 6.18, the owner or operator shall observe specific monitoring and record keeping requirements.

**III. Other Requirements**

1. **Temporary Sources:** The source did not request to operate any temporary facilities.
2. **Short Term Activities:** The source did not report any short term activities.
3. **Emissions Trading:** N/A
4. **Alternative Operating Scenarios:** The source did not request any alternative operating scenarios.
5. **Compliance History:**

Incid. #	Date	Regulation Violated	Settlement
05050	11/05/2007	Reg. 2.03, section 5, Failure to Comply with District Permit	Agreement with fine

6. **Calculation Methodology or Other Approved Method:**

The PM/PM<sub>10</sub> emissions from the Grinders, Chamfering Machines, Shot Blaster, Continuous Shot Peening Machines, Shot Peening Machines, Pre-Shot Peening Machines, Inspection Machines, and Cooling Towers must be calculated according to the following methodology or other method approved in writing by the District:

For the Edge Grinders:

$$PM_{E-lineVSGrinder} = \left( \frac{\# \text{ springs}}{\text{month}} \right) \left( \frac{\text{lb}}{\text{spring}} \right) (0.0695)(1 - CE_{Baghouse})(1 - CE_{HEPA \text{ Filter}})$$

$$PM_{SmallVSGrinder} = \left( \frac{\# \text{ springs}}{\text{month}} \right) \left( \frac{\text{lb}}{\text{spring}} \right) (0.0849)(1 - CE_{Baghouse})(1 - CE_{HEPA \text{ Filter}})$$

$$PM_{LargeVSGrinder} = \left( \frac{\# \text{ springs}}{\text{month}} \right) \left( \frac{\text{lb}}{\text{spring}} \right) (0.0735)(1 - CE_{Baghouse})(1 - CE_{HEPA \text{ Filter}})$$

$$PM_{LargeTSGrinder} = \left( \frac{\# \text{ springs}}{\text{month}} \right) \left( \frac{\text{lb}}{\text{spring}} \right) (0.1166)(1 - CE_{Baghouse})(1 - CE_{HEPA \text{ Filter}})$$

For the Chamfering Machines:

$$PM_{Chamfering} = \left( \frac{\# \text{ springs}}{\text{month}} \right) \left( \frac{\text{lb}}{\text{spring}} \right) (0.015)(1 - CE_{Baghouse})(1 - CE_{HEPA \text{ Filter}})$$

Where,

# springs/month = The sum of the daily number of each type of springs processed for each piece of equipment for the month.

lb/spring = The average weight of each type of spring (0.0644 lb/spring for valve spring, VS, for grinding operations and 0.060 lb/spring for valve spring, VS, for chamfering operations).

EF (0.0695) = Emission factor for the E-Line valve spring grinders representing pounds of PM generated per pound of springs processed (lb PM/lb springs).

EF (0.0735) = Emission factor the large valve spring grinders representing pounds of PM generated per pound of springs processed (lb PM/lb springs).

EF (0.0849) = Emission factor for the small valve spring grinders

representing pounds of PM generated per pound of springs processed (lb PM/lb springs).

EF (0.1166) = Emission factor for the large transmission spring grinders representing pounds of PM generated per pound of springs processed (lb PM/lb springs).

EF (0.015) = Emission factor for the chamfering machine representing pounds of PM generated per pound of springs processed (lb PM/lb springs).

$CE_{\text{Baghouse}}$  = 0.95 for baghouses, unless stack testing indicated a different value.

$CE_{\text{HEPA Filter}}$  = 0.99 for other filters, unless stack testing indicates a different value.

For Cooling Tower:

$$PM_{10CT} = \left( \text{Flow Rate} \frac{\text{Gal}}{\text{hr}} \right) \left( \text{TDS} \frac{\text{lbPM}}{\text{gal}} \right) (\text{Total Liquid Drift}(\text{AP} - 42) (\%))$$

Where,

Flow Rate = Flow Rate of the cooling tower

TDS = Total Dissolved Solids obtained from Louisville MSD Report

Total Liquid Drift (AP-42) = AP-42 emission factor for PM

For Continuous Shot Peening (D-6):

$$PM_{SP} = \left( \text{Shot Capacity} \frac{\text{lb}}{\text{hr}} \right) \left( \frac{27\text{lbPM}}{1000\text{lb}} \right) (0.10) \left( \frac{\text{OperatingHours}}{\text{Month}} \right) (1 - CE_{\text{Baghouse}})(1 - CE_{\text{HEPA Filter}})$$

$$PM_{10SP} = \left( \text{Shot Capacity} \frac{\text{lb}}{\text{hr}} \right) \left( \frac{13\text{lbPM}}{1000\text{lb}} \right) (0.10) \left( \frac{\text{OperatingHours}}{\text{Month}} \right) (1 - CE_{\text{Baghouse}})(1 - CE_{\text{HEPA Filter}})$$

For Shot Blast Equipment (SB-1):

$$PM_{SB} = \left( \text{Shot Capacity} \frac{\text{lb}}{\text{hr}} \right) \left( \frac{27\text{lbPM}}{1000\text{lb}} \right) \left( \frac{\text{OperatingHours}}{\text{Month}} \right) (0.10) (1 - CE_{\text{HEPA Baghouse}})$$

$$PM_{10SB} = \left( \text{Shot Capacity} \frac{\text{lb}}{\text{hr}} \right) \left( \frac{13\text{lbPM}}{1000\text{lb}} \right) \left( \frac{\text{OperatingHours}}{\text{Month}} \right) (0.10) (1 - CE_{\text{HEPA Baghouse}})$$

For Shot Blast Equipment (SB-2):

$$PM_{SB} = \left( \text{Shot Capacity} \frac{\text{lb}}{\text{hr}} \right) \left( \frac{27\text{lbPM}}{1000\text{lb}} \right) \left( \frac{\text{OperatingHours}}{\text{Month}} \right) (0.10) (1 - CE_{\text{Baghouse}})$$

$$PM_{10SB} = \left( \text{Shot Capacity} \frac{\text{lb}}{\text{hr}} \right) \left( \frac{13\text{lbPM}}{1000\text{lb}} \right) (0.10) \left( \frac{\text{OperatingHours}}{\text{Month}} \right) (1 - CE_{\text{Baghouse}})$$

Where,

Shot Capacity = Shot capacity based on nozzle size and air pressure (i.e. <http://www.marco.us/docs/library/technical/other/air-abrasive-consumption-chart---1091029.pdf?sfvrsn=6>)

$CE_{\text{Baghouse}}$  = 0.95 for baghouses, unless stack testing indicated a different value.

$CE_{\text{Filter}}$  = 0.90 for other filters, unless stack testing indicates a different value.

$CE_{\text{HEPA Filter}}$  = 0.99 for HEPA filters, unless stack testing indicates a different value.

OperatingHours/Month = The sum of the daily operating hours for each piece of equipment

$(27\text{lbPM}/1000\text{ lb})(0.10)$  = AP-42, section 13.2.6 Abrasive Blasting using steel shot emission factor for PM

$(13\text{lbPM}/1000\text{ lb})(0.10)$  = AP-42, section 13.2.6 Abrasive Blasting using steel shot emission factor for  $PM_{10}$

For the Shot Peening (SP):

$$PM_{SP} = \left( \text{Shot Capacity} \frac{\text{lb}}{\text{hr}} \right) \left( \frac{27\text{lbPM}}{1000\text{lb}} \right) (0.10) \left( \frac{\text{OperatingHours}}{\text{Month}} \right) \left( 1 - CE_{\frac{\text{Baghouse}}{(\text{cartridge} \text{ filter})}} \right) (1 - CE_{\text{Filter or HEPA Filter}})$$

$$PM_{10SP} = \left( \text{Shot Capacity} \frac{\text{lb}}{\text{hr}} \right) \left( \frac{13\text{lbPM}}{1000\text{lb}} \right) (0.10) \left( \frac{\text{OperatingHours}}{\text{Month}} \right) \left( 1 - CE_{\frac{\text{Baghouse}}{(\text{cartridge} \text{ filter})}} \right) (1 - CE_{\text{Filter or Hepa Filter}})$$

Where,

Shot Capacity	=	Shot capacity based on nozzle size and air pressure (i.e. <a href="http://www.marco.us/docs/library/technical/other/air-abrasive-consumption-chart---1091029.pdf?sfvrsn=6">http://www.marco.us/docs/library/technical/other/air-abrasive-consumption-chart---1091029.pdf?sfvrsn=6</a> )
$CE_{\text{Baghouse}}$	=	0.95 for baghouses, unless stack testing indicated a different value.
$CE_{\text{Filter}}$	=	0.90 for other filters, unless stack testing indicates a different value.
$CE_{\text{HEPA Filter}}$	=	0.99 for HEPA filters, unless stack testing indicates a different value.
OperatingHours/Month	=	The sum of the daily operating hours for each piece of equipment
$(27\text{lbPM}/1000\text{ lb})(0.10)$	=	AP-42, section 13.2.6 Abrasive Blasting using steel shot emission factor for PM
$(13\text{lbPM}/1000\text{ lb})(0.10)$	=	AP-42, section 13.2.6 Abrasive Blasting using steel shot emission factor for $PM_{10}$

For the Inspection Machines:

$$PM_{\text{inspection machine}} = \left( \frac{\text{Throughput}}{\text{month}} \right) (\text{Density})(0.05)(1 - CE_{\text{Filter}})$$

Where,

Throughput/month	=	Gallons of coating used each month in each inspection machine.
Density	=	Density of the coating in lb/gallon.
EF	=	Emission factor for the inspection machines representing percent solids of PM contained in the coating.
$CE_{\text{Filter}}$	=	0.90 for other filters, unless stack testing indicates a different value.

For the GCN-Furnaces (natural gas combustion):

$$Emissions_{\text{GCN Furnaces}} = \left( \frac{\text{Throughput}}{\text{month}} \right) (EF)$$

Where,

Throughput/month = million cubic feet of natural gas used (can be obtained from Gas/Electric Bill) each month in GCN Furnaces combined.

EF = Emission factor for the natural gas combustion from AP-42

For the GNC-Furnaces (Nitrogen and Ammonia injection):

$$NH3_{GNC\ Furnaces} = \left( \frac{\text{Throughput}}{\text{month}} \right) (0.00003) (1 - CE_{wet\ scrubber})$$

$$NOx_{GNC\ Furnaces} = \left( \frac{\text{Throughput}}{\text{month}} \right) (0.0000162)$$

Where,

Throughput/month = million cubic feet of natural gas used (can be obtained from Gas/Electric Bill) each month in GCN Furnaces combined.

$CE_{wet\ scrubber}$  = 0.90 for other filters, unless stack testing indicates a different value.

## 7. Insignificant Activities

Equipment	Quantity	PTE (tpy)	Basis for Exemption
Pressurized 1000 gallon Ammonia Tank, make Mississippi Tank Co.	2	0	Regulation 1.02
GCN (Direct-fired Furnaces)	6	< 0.03 NOx total	Regulation 1.02
Hot Setting Machine	6	0.6 VOC total	Regulation 1.02

- 1) Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements.
- 2) Insignificant activities identified in District Regulation 1.02, Appendix A shall comply with generally applicable requirements.
- 3) The owner or operator shall annually submit an updated list of insignificant activities that occurred during the preceding year, with the compliance certification due April 15<sup>th</sup>.
- 4) Emissions from Insignificant Activities shall be reported in conjunction with the

reporting of annual emissions of the facility as required by the District.

- 5) The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) as the annual emissions for each piece of equipment.
- 6) The District has determined that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.

a. **Emission Unit IA-1 – Equipment Subject to STAR only**

i. **Equipment**

<b>Emission Process</b>	<b>Description</b>	<b>Applicable Regulations</b>	<b>Basis for Applicability</b>
TNK-1 and TNK-3	Two (2) 1000 gallon Ammonia Tank, make Mississippi Tank Co.	STAR	Regulations 5.00, 5.01, 5.20, 5.21, 5.22, and 5.23 are applicable to any process or process equipment at a stationary source that emits a TAC.
GCN-1; GCN-2; GCN-3; GCN-4; GCN-5; and GCN-6	GCN-1 through GCN- 6 (direct fired Furnaces)		
A-16	Hot Setting Machine Make Morita Co., CSS3		
B-12	Hot Setting Machine Make Morita Co., CSS3		
E-12	Hot Setting Machine		
F-12	Hot Setting Machine		
G-12	Hot Setting Machine		
H-12	Hot Setting Machine		

ii. **Standards/Operating Limits**

1) **PM<sub>10</sub>**

- (a) See Plantwide section above.

2) **TAC**

- (a) See Plantwide section above.